

1 CLAIMS

2 What is claimed is:

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4 1. A mattress comprising a plurality of spring coils, each spring coil having a
5 top with a first width, a middle with a second width, and bottom with a third width,
6 the top and the bottom connected by a continuous coil of wire, the spring coil having
7 a longitudinal taper such that the third width of the bottom is substantially equal to
8 the second width of the middle, and the first width of the top is smaller than the
9 second width of the middle.

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11 2. The mattress of claim 1 wherein each spring coil is unattached to adjacent
12 spring coils along a top half of that spring coil.

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14 3. The mattress of claim 1 wherein each spring coil is a pocket coil.

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16 4. The mattress of claim 3 wherein each spring coil is attached to at least one
17 adjacent one of the plurality of spring coils with an adhesive.

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19 5. The mattress of claim 4 wherein a top portion of each spring coil is
20 unadhered to any adjacent spring coil.

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22 6. The mattress of claim 4 wherein a top half of each spring coil is unadhered to
23 any adjacent spring coil.

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25 7. The mattress of claim 1 wherein each spring coil is an open coil.

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27 8. The mattress of claim 7 wherein each spring coil is attached to at least one
28 adjacent one of the plurality of spring coils with one or more hog rings.

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30 9. The mattress of claim 7 wherein a top portion of each spring coil is
31 unattached to any adjacent spring coil.

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2 10. The mattress of claim 7 wherein a top half of each spring coil is unattached
3 to any adjacent spring coil.

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5 11. The mattress of claim 1 wherein the plurality of spring coils includes a
6 plurality of pocket coils and a plurality of open coils.

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8 12. A mattress comprising a plurality of spring coils, each spring coil having a
9 top and a bottom, the top and the bottom connected by a continuous coil of wire
10 characterized by a convex longitudinal taper along an exterior surface thereof, the
11 convex longitudinal taper having a radius of curvature that monotonically decreases
12 from the bottom of the spring coil to the top of the spring coil.

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14 13. A mattress comprising a plurality of spring coils, each spring coil attached to
15 a bottom portion of at least one adjacent spring coil such that a top portion of the
16 spring coil and a top portion of the at least one adjacent spring coil are independently
17 vertically moveable with respect to one another.

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19 14. A mattress comprising a plurality of spring coils each having a top and a
20 bottom, the plurality of spring coils arranged adjacent to one another to form a
21 planar top surface along the tops thereof and a planar bottom surface along the
22 bottoms thereof, a third planar surface forming a center line between the planar top
23 surface and the planar bottom surface, the plurality of spring coils maintained in
24 fixed relation to one another below the center line such that the top of each one of
25 the plurality of spring coils may move independently perpendicular to the top planar
26 surface with respect to each other one of the plurality of spring coils.

27
28 15. A method of manufacturing a mattress comprising:
29 providing a plurality of spring coils;
30 arranging the plurality of spring coils adjacent to one another in a manner
31 suitable for use in a mattress core;

1 attaching a bottom portion of each one of the plurality of spring coils to at
2 least one other one of the plurality of spring coils; and
3 enclosing the plurality of spring coils in one or more upholstery layers
4 without attaching a top portion of any one of the plurality of spring coils to any other
5 one of the plurality of spring coils.

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7 16. The method of claim 15 wherein the spring coils are asymmetric coils.

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9 17. The method of claim 15 further comprising encasing each one of the plurality
10 of spring coils in a pocket and attaching the bottom portion with an adhesive.

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12 18. The method of claim 15 further comprising attaching the bottom portion with
13 one or more hog rings.

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15 19. A method of manufacturing a mattress comprising:
16 providing a plurality of spring coils;
17 providing a bottom surface of a mattress;
18 arranging the plurality of spring coils adjacent to one another on the bottom
19 surface in a manner suitable for use in a mattress core;
20 attaching a bottom portion of each one of the plurality of spring coils to the
21 bottom surface; and
22 enclosing the plurality of spring coils in one or more upholstery layers
23 without attaching a top portion of any one of the plurality of spring coils to any other
24 one of the plurality of spring coils.

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26 20. The method of claim 19 further comprising attaching the bottom portion of
27 one or more of the plurality of spring coils to an adjacent one of the plurality of
28 spring coils.